

Table 1: Baseline patient characteristics

Characteristics	Values*
Age (years)	66.2 (10.1)
Sex [male]	26 (74%)
Height of primary tumour (from anal verge)	
Low (0-5cm)	18 (51%)
Medium/high (>5cm)	17 (49%)
Operation type	
TME	23 (66%)
APR	10 (29%)
Palliative	2 (6%)
Tumour stage at baseline on MR	
T2	8 (23%)
T3a	6 (17%)
T3b	4 (11%)
T3c	4 (11%)
T3d	2 (6%)
T4a	5 (14%)
T4b	1 (3%)
Poor quality image	5 (14%)

*N=35 patients; values are mean (SD) or n(%).

Table 2 Patient characteristics with full MR imaging and histopathology

Characteristics	Values*
MRI tumour T-stage post NACRT (ymrT)	
Week 9	
T0	4 (11%)
T1	1 (3%)
T2	10 (29%)
T3a	2 (6%)
T3b	4 (11%)
T3c	3 (9%)
T3d	1 (3%)
T4a	5 (14%)
Poor quality image	5 (14%)
Week 14	
T0	7 (20%)
T1	5 (14%)
T2	4 (11%)
T3a	5 (14%)
T3b	4 (11%)
T3c	1 (3%)
T3d	1 (3%)
T4a	3 (9%)
Poor quality image	5 (14.%)
MRI Tumour regression grading (ymrTRG)	
Week 9	
1	3 (9%)
2	10 (29%)
3	7 (20%)
4	9 (26%)
5	1 (3%)
Poor quality image	5 (14%)
Week 14	
1	10 (29%)
2	8 (23%)
3	5 (14%)
4	4 (11%)
5	3 (9%)
Poor quality image	5 (14%)

Volume change**Week 9**

<80%	20 (57%)
≥80%	10 (29%)
Poor quality image	5 (14%)

Week 14

<80%	10 (29%)
≥80%	20 (57%)
Poor quality image	5 (14%)

Postoperative pathological T-stage(ypT)

T0	8 (23%)
T1	2 (6%)
T2	7 (20%)
T3	3 (9%)
T3a	6 (17%)
T3b	2 (6%)
T4a	1 (3%)
T4b	4 (11%)
Missing	2 (6%)

Postoperative pathological tumour regression grading (ypTRG)

0	3 (9%)
1	8 (23%)
2	6 (17%)
3	8 (23%)
4	8 (23%)
Missing	2 (6%)

*N=35 patients; values n(%).

NACRT – neoadjuvant chemoradiotherapy

Table 3 – Results from logistic regression analysis with pathological T-stage (ypT) as an outcome variable

Variable	Pathology Outcome		OR [#]	95% CI	p-value
	Favourable	Unfavourable			
Age (years) mean (SD)	65.5 (10.8)	68 (8.8)	1.0	0.9, 1.1	0.56
Sex					
Male	20	6	1.8	0.2, 18.0	0.62
Female	6	1			
Week 9 ymrT-stage					
Favourable	16	6	17.8	1.7, 165.0	0.005
Unfavourable	0	6			
Week 14 ymrT-stage					
Favourable	19	1	31.7	2.7, 373.7	0.006
Unfavourable	3	5			
Week 9 ymrTRG					
Favourable	17	2	6.8 [^]	0.9, 48.7	0.056
Unfavourable	5	4			
Week 14 ymrTRG					
Favourable	20	2	20.0	2.1, 186.9	0.009
Unfavourable	2	4			
Week 9 volume change					
Favourable	10	0	N/A	N/A	N/A
Unfavourable	12	6			
Week 14 volume change					
Favourable	18	4	22.5	2.0, 249.2	0.011
Unfavourable	1	5			
Adjusted for baseline			16.7	1.4, 197.1	0.025

[#] All OR, 95% CI and p-values are unadjusted unless specified otherwise.

[^] Unable to adjust as this is the baseline value

ymrT - MRI defined tumour T-stage post neoadjuvant chemoradiotherapy; ymrTRG - MRI defined tumour regression grading post neoadjuvant chemoradiotherapy

Table 4 - Logistic regression with pathological tumour regression grading (ypTRG) as the outcome variable

Variable	Pathology Outcome		OR [#]	95% CI	p-value
	Favourable	Unfavourable			
Age years) mean (SD)	63.9 (45, 88)	68.1 (56, 83)	1.0	0.9, 1.0	0.244
Sex					
Male	10	16	9.6	1.0, 92.0	0.052
Female	6	1			
Week 9 ymrT-stage					
Favourable	12	4	9.0	1.6, 50.7	0.013
Unfavourable	3	9			
Adjusted for baseline			3.4	0.7, 16.2	0.128
Week 14 ymrT-stage					
Favourable	14	6	16.3	1.6, 163.4	0.017
Unfavourable	1	7			
Adjusted for baseline			17.5	1.2, 250.4	0.035
Week 9 ymrTRG					
Favourable	13	6	7.6 [^]	1.2, 48.0	0.031
Unfavourable	2	7			
Week 14 ymrTRG					
Favourable	15	7	14.0*	1.5, 134.2	0.022
Unfavourable	0	6			
Week 9 volume change					
Favourable	8	2	6.3	1.0, 38.7	0.047
Unfavourable	7	11			
Adjusted for baseline			5.1	0.8, 32.6	0.085
Week 14 volume change					
Favourable	14	1	22.4	2.2, 227	0.009
Unfavourable	5	8			
Adjusted for baseline			18.7	1.8, 198.9	0.015

[^] Unable to adjust as this is the baseline value

[#] All OR, 95%CI and p-values are unadjusted unless specified otherwise.

ymrT - MRI defined tumour T-stage post neoadjuvant chemoradiotherapy; ymrTRG - MRI defined tumour regression grading post neoadjuvant chemoradiotherapy